OCULAR MANIFESTATIONS OF GRAVES' DISEASE: THERAPEUTIC APPROACHES*

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THYROID dysfunction is the commonest cause of unilateral exophthalmos[1] and an even more common cause of bilateral exophthalmos.

The ocular changes of Graves' disease long have been divided into mild and severe forms; however, it now is believed that they represent a single disease process, mild changes being the most common and severe changes the least common. In order to classify these changes and in the hope of eliminating the many different terms which have come into use over the years for the ocular pictures, the American Thyroid Association has adopted the mnemonic NO SPECS[2] in which the classes of disease are represented as follows:

0 No signs or symptoms

1 Only signs and no symptoms, upper lid retraction with or without lid lag or proptosis

2 Soft tissue involvement, lid swelling, gritty sensation, tearing, injection of the globes, and chemosis

3 Proptosis—variable, but above 22 mm. is considered abnormal

4 Extraocular muscular involvement

5 Corneal involvement

6 Sight loss, involvement of optic nerve

The cause of these ocular changes is unknown. Treatment is not ideal but may be discussed under the headings which follow.

Prevention. Clinicians, particularly surgeons who specialize in treating the thyroid long have suspected that treatment of thyrotoxicosis may make the ocular complications worse. Results of a study of more than 125 patients who were treated with the least amount of antithyroid drug com-

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mensurate with their general health and whose drug dosage was determined by their ocular signs strongly suggest that rapid control of thyrotoxicosis, by whatever means, well may cause exacerbation of the ocular condition.[3] Therefore, careful, gradual control of toxicity may be more significant than any form of treatment once the ocular changes are well established.

Symptomatic treatment. Sleeping with the head elevated reduces the amount of fluid that tends to collect about the orbits during the night. Lubrication of the eyes at bedtime with a bland ointment may reduce irritation on arising.

Occlusion of one eye eliminates annoying double vision. This will have no permanent effect on vision; usually, the patient prefers to have the nondominant eye covered.

The most annoying symptoms may last two or more years. Assuring the patient, not that the eyes will return to normal but that they eventually will become comfortable, is often the physician's primary duty.

Hormones. Exogenous thyroid is of no benefit in this condition. In the occasional patient in which it seems to relieve swelling of the lids, it probably is simply correcting an underlying hypothyroid state. D-thyroxine also has no effect on the ocular changes.

Both androgens and estrogens have been studied and also appear to have no beneficial effect on the eyes.

Corticosteroids reduce swelling and inflammation, but these endocrine preparations do not reduce proptosis or improve the function of the extraocular muscles. However, they afford ocular comfort to the patient, and once started must be continued for many months. Since the consequent side effects are severe, the use of corticosteroids should be considered only as a calculated risk. Their use appears to be justified when the optic nerves are involved[4] for they restore vision and help to prevent blindness, but the general medical condition of the patient must be studied carefully and repeatedly.

Diuretics. Various diuretics have been employed to reduce swelling of the tissues about the orbit, but their effect is limited.

Irradiation. Differing modes of irradiation to the orbits and to the pituitary gland have their advocates, but none has been shown to be of definite benefit.

Surgery. Corneal exposure may lead to corneal ulceration and loss of the eye. Lid adhesions, placed so as not to interfere with vision, will prevent this complication.

Hypophysectomy. This radical procedure has been shown to be of no real benefit with regard to the eyes.[5]

Orbital decompression may be accomplished by unroofing, by excising the lateral wall, or by removing the floor and ethmoid cells.[6] The last procedure affords the greatest decompression; although it has no specific effect on the disease process, it reduces orbital pressure and reduces complications such as corneal exposure, proptosis, and involvement of the optic nerves.

Late surgery. Widening of the fissures may be corrected by plastic operations on the lids, but it must be borne in mind that upper lid retraction disappears in 10 years in two thirds of patients.[7]

Surgery of the extraocular muscles should be considered only when the orbital process has become inactive. Surgical operation may make it possible for the patient to obtain single binocular vision, at least in a reading position.

In summary, prevention of the severe ocular changes of Graves' disease is superior to any form of treatment. Therefore, whenever the patient has ocular complaints the thyrotoxicosis should be treated cautiously.

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